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10/754,487

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Larry W. Gatlin

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EXAMINER

BOYER, RANDY

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

06/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/754,487

Applicant(s)

GATLIN, LARRY W.

Examiner

Randy Boyer

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Examiner acknowledges response filed 26 March 2007 containing amended claims 1, 2, 18, 19, and remarks.
2. Examiner acknowledges that amendments made to claim 18 overcome the previous duplicate claims warning issued between claims 1 and 18.
3. The previous rejection of claims 1-27 under 35 U.S.C. 102(b) is withdrawn in view of Applicant's arguments and amendments to the claims. Likewise, the previous rejection of claims 1-35 on the ground of nonstatutory obviousness-type double patenting is withdrawn in view of Applicant's arguments and amendments to the claims.
4. The previous rejection of claims 28-35 under 35 U.S.C. 102(b) is maintained. In addition, new grounds for rejection necessitated by Applicant's amendments to the claims are entered with respect to claims 2 and 19 under 35 U.S.C. 112, first paragraph; claims 1-10, 12, 15, and 18-27 under 35 U.S.C. 102(b); and claims 7-9, 11, 13, 14, 16, 17, and 27 under 35 U.S.C. 103(a) are entered. The rejections follow.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, Examiner does not find support in Applicant's specification for the limitation "where the CH<sub>2</sub>R groups are derived from the at least one aldehyde used in the reaction."

***Claim Rejections - 35 USC § 102***

7. Claims 1-10, 12, 15, and 18-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Weers (US 5074991).

8. With respect to claims 1 and 18, Weers discloses contacting a fluid including noxious sulfur-containing species with an effective amount of a sulfur scavenging composition comprising substantially monomeric aldehyde-amine adducts formed from a reaction of a molar excess of an aldehyde or aldehyde donor and a secondary amine having at least one sterically bulk substituent (see Weers, column 2, lines 20-68; and column 3, lines 1-2 and 66-68; and column 4, line 1).

9. With respect to claims 2-6, 19, and 23-26, Weers discloses the use of aldehyde and amine species to produce a sulfur scavenging composition (see Weers, column 3, lines 5-50).

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10. With respect to claims 7 and 27, Weers discloses wherein the sulfur scavenging composition comprises a solution including greater than 100 ppm of the aldehyde-amine reaction product, the remainder being a solvent (see Weers, column 4, lines 33-43).

11. With respect to claims 8-10, 12, 15, and 20-22, Weers discloses contacting a sulfur scavenging composition with a hydrocarbon containing hydrogen sulfide (see Weers, column 1, lines 39-46; column 2, lines 56-68; and column 3, lines 1-2).

12. Claims 28-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Weers (EP 475641 A).

13. With respect to claims 28 and 29, Weers provides an inherent disclosure for contacting a sulfur scavenging composition *in a container*. Weers does not explicitly disclose use of a "container." Nevertheless, the person having ordinary skill in the art would recognize from Weers' disclosure that use of some sort of container is necessary to hold the sulfur-containing hydrocarbon to be treated by the sulfur scavenging composition. Likewise, the person having ordinary skill in the art would recognize that the sulfur scavenging composition could be added (or "contacted") with the hydrocarbon either prior to, after, or at the same time as adding the hydrocarbon to the "container."

14. With respect to claim 30, Weers discloses a sulfur scavenging composition comprising a solution including from about 5 wt.% to about 50 wt.% of the adducts, the remainder being a solvent (see Weers, page 5, lines 57-58).

15. With respect to claim 31, Weers discloses contacting a sulfur scavenging composition with a hydrocarbon containing hydrogen sulfide (see Weers, page 5, lines 53-54).

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16. With respect to claims 32-34, Weers provides an inherent disclosure for introduction of a sulfur scavenging composition via a chemical tool, coiled tubing, or capillary coiled tubing (CCT). Weers does not provide an explicit disclosure for the means by which the sulfur scavenging composition is added to the sulfur-containing hydrocarbon to be treated. Nevertheless, the person having ordinary skill in the art would recognize that any suitable means could be used, be it by pouring (i.e. "batch introducing step"), by pumping the composition through a pipe, or other "chemical tool," "coiled tubing," or "capillary coiled tubing (CCT)."

17. With respect to claim 35, Weers discloses a sulfur scavenging composition comprising a solution including from about 5 wt.% to about 50 wt.% of the adducts, the remainder being a solvent (see Weers, page 5, lines 57-58).

### ***Claim Rejections - 35 USC § 103***

18. Claims 7-9, 11, 13, 14, 16, 17, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weers (US 5074991).

19. With respect to claims 7 and 27, Weers discloses wherein the sulfur scavenging composition comprises a solution including greater than 100 ppm of the aldehyde-amine reaction product, the remainder being a solvent.

Weers does not disclose wherein the composition comprises a solution including from about 5 wt% to about 50 wt% of the adducts the remainder being a solvent.

However, in the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists. See MPEP § 2144.05.

20. With respect to claims 8, 9, 11, 13, 14, 16, and 17 Weers does not disclose wherein the fluid comprises an inverted mud or drilling fluid; overbalanced inverted drilling fluid, weighted inverted drilling fluid, or underbalanced drilling fluid; gasoline, kerosene, jet fuels, diesels, stabilized condensates, and LPG; heavy oil fraction from recovery of bitumens, processed mineral oil, process mined extract, bunker C, or a heavy fuel; lubricating oil; packer fluid; storage fluid or a pickling fluid.

However, Weers discloses the use of a sulfur scavenging composition comprising substantially monomeric aldehyde-amine adducts formed from a reaction of a molar excess of an aldehyde or aldehyde donor and a secondary amine having at least one sterically bulk substituent (see Weers, column 3, lines 5-50). Weers discloses the use of such composition with hydrocarbon liquids and gases containing hydrogen sulfide, including natural gases or off gases from the production, transport, storage, and refining of crude oil, as well as petroleum residua (see Weers, column 1, lines 39-46). Thus, Weers's disclosure is broad enough to encompass the use of such compositions to treat *any* hydrocarbon stream or material that contains hydrogen sulfide contaminants.

Therefore, the person having ordinary skill in methods for removing hydrogen sulfide would have been motivated to use the compositions disclosed by Weers to treat

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the fluids named in claims 8, 9, 11, 13, 14, 16, and 17 because all are hydrocarbon fluids.

Finally, the person having ordinary skill in methods for removing hydrogen sulfide would have had a reasonable expectation of success because (1) Weers is directed to the removal of hydrogen sulfide contaminants from hydrocarbon liquids and gases, and (2) all of the fluids named in claims 8, 9, 11, 13, 14, 16, and 17 are hydrocarbon fluids.

Thus, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to use the sulfur scavenging composition of Weers to remove hydrogen sulfide from the hydrocarbon fluids named in claims 8, 9, 11, 13, 14, 16, and 17.

### ***Response to Arguments***

21. Applicant's arguments, filed 26 March 2007, with respect to claims 1-35 have been fully considered and are persuasive. Consequently, the previous rejection of claims 1-27 under 102(b), and claims 1-35 on the ground of nonstatutory obviousness-type double patenting has been withdrawn.

### ***Conclusion***

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 8:00 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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